High-Mu Twin Triode

9-PIN MINIATURE TYPE

For Use in Mobile-Communications Equipment Operating from 6-Cell Storage-Battery Systems

GENERAL DATA

Electrical:

Heater Characteristics and Ratings *(Absolute-Maximum Values):*

Voltage (AC or DC)[a]	13.5 ± 1.5	volts
Current at heater volts = 13.5	0.150	amp
Peak heater-cathode voltage (Each unit):		
Heater negative with respect to cathode	100 max.	volts
Heater positive with respect to cathode	100 max.	volts

Direct Interelectrode Capacitances (Approx.):

	Without External Shield	*With External Shield*[b]	
Grid-Drive Operation:			
Grid to plate (Each unit)	1.6	1.6	μμf
Grid to cathode and heater (Each unit)	2.5	2.5	μμf
Plate to cathode and heater (Unit No.1)	0.45	1.2	μμf
Plate to cathode and heater (Unit No.2)	0.38	1.3	μμf
Cathode-Drive Operation:			
Cathode to plate (Unit No.1)	0.2	0.18[d]	μμf
Cathode to plate (Unit No.2)	0.24	0.2[d]	μμf
Cathode to grid and heater (Each unit)	5	5[d]	μμf
Plate to grid and heater (Unit No.1)	1.9	2.7[d]	μμf
Plate to grid and heater (Unit No.2)	1.8	2.7[d]	μμf
Heater to cathode (Each unit)	2.8	2.8[c]	μμf
Plate to plate	0.24	–	μμf

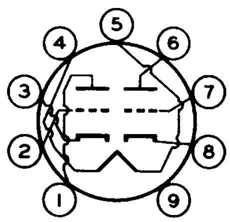
Characteristics, Class A_1 Amplifier (Each Unit):

Heater Voltage	13.5	volts
Plate Supply Voltage	250	volts
Cathode Resistor	200	ohms
Amplification Factor	60	
Plate Resistance (Approx.)	10900	ohms
Transconductance	5500	μmhos
Plate Current	10	ma
Grid Voltage (Approx.) for plate μa = 10	−12	volts

Mechanical:

Operating Position	Any
Type of Cathodes	Coated Unipotential
Maximum Overall Length	2-3/16"
Maximum Seated Length	1-15/16"
Length, Base Seat to Bulb Top (Excluding tip)	1-9/16" ±3/32"
Diameter	0.750" to 0.875"
Dimensional Outline	See *General Section*
Bulb	T6-1/2
Base	Small-Button Noval 9-Pin (JEDEC No.E9-1)
Basing Designation for BOTTOM VIEW	9EP

Pin 1 - Plate of Unit No.2
Pin 2 - Grid of Unit No.2
Pin 3 - Cathode of Unit No.2
Pin 4 - Heater
Pin 5 - Heater



Pin 6 - Plate of Unit No.1
Pin 7 - Grid of Unit No.1
Pin 8 - Cathode of Unit No.1
Pin 9 - Do Not Use

AMPLIFIER — Class A_1

Values are for Each Unit

Maximum Ratings, *Absolute-Maximum Values:*

PLATE VOLTAGE	330 max.	volts
GRID VOLTAGE:		
Negative-bias value	55 max.	volts
Positive-bias value	0 max.	volts
PLATE DISSIPATION	2.75 max.	watts
BULB TEMPERATURE (At hottest point on bulb surface)	180 max.	°C

Maximum Circuit Values:

Grid-Circuit Resistance:		
For fixed-bias operation	0.25 max.	megohm
For cathode-bias operation	1 max.	megohm

[a] Heater will withstand momentary excursions from 11.0 to 16.0 volts.
[b] With external shield JEDEC No.315 connected to cathode of unit under test except as noted.
[c] With external shield JEDEC No.315 connected to ground.
[d] With external shield JEDEC No.315 connected to grid of unit under test.

SPECIAL RATINGS AND PERFORMANCE DATA

Heater-Cycling:

Cycles of Intermittent Operation	1160 min.	cycles

This test is performed on a sample lot of tubes from each production run under the following conditions: Heater volts = 19.5 cycled one minute on and two minutes off; heater 135 volts negative with respect to cathode; all other elements

connected to ground. At the end of this test, tubes are tested for heater-cathode shorts and open circuits.

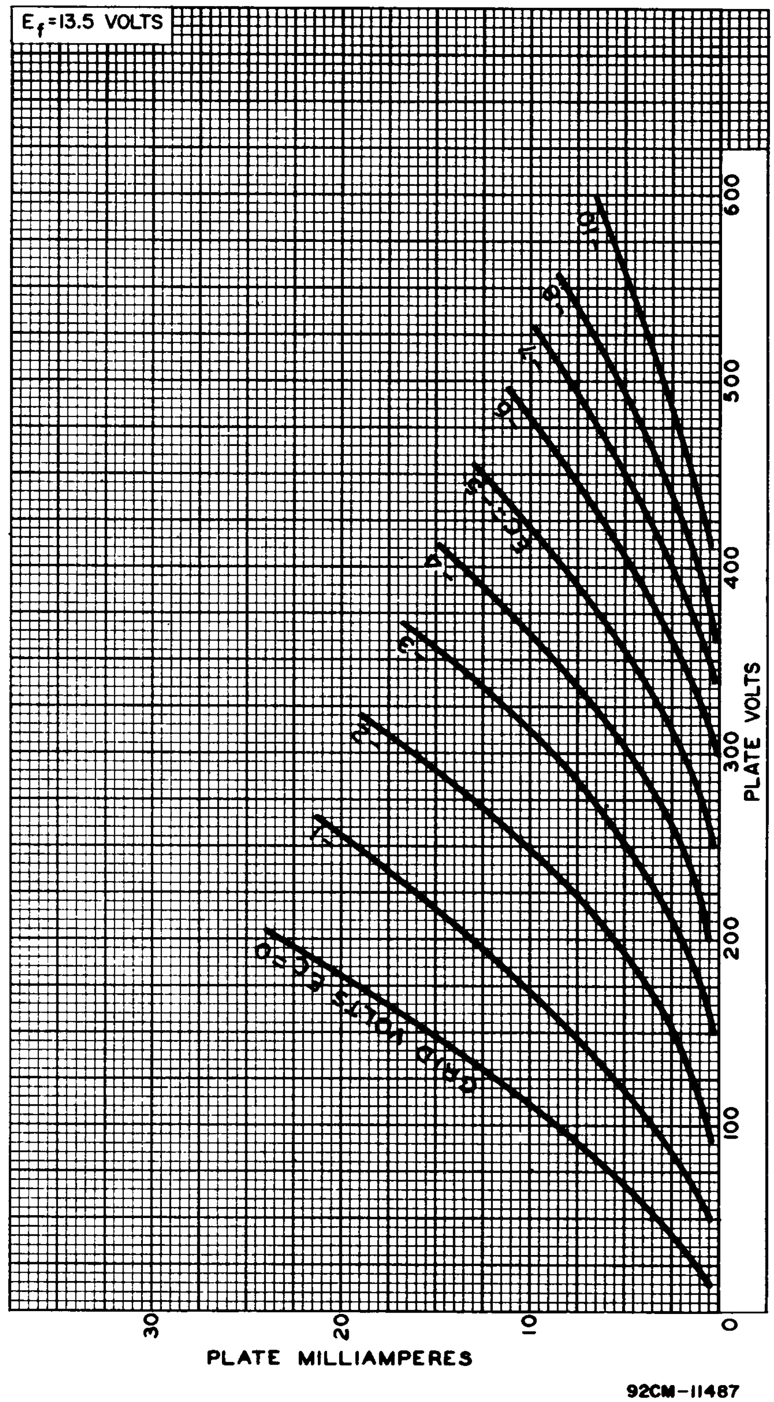
Low-Frequency Vibration Performance:

This test is performed on a sample lot of tubes from each production run under the following conditions: Units connected in parallel, heater volts = 13.5, plate-supply volts = 250, grid volts = -3, plate load resistor (ohms) = 2000, and vibrational acceleration = 2.5 g at 25 cps. In this test, the rms output voltage must not exceed 150 millivolts.

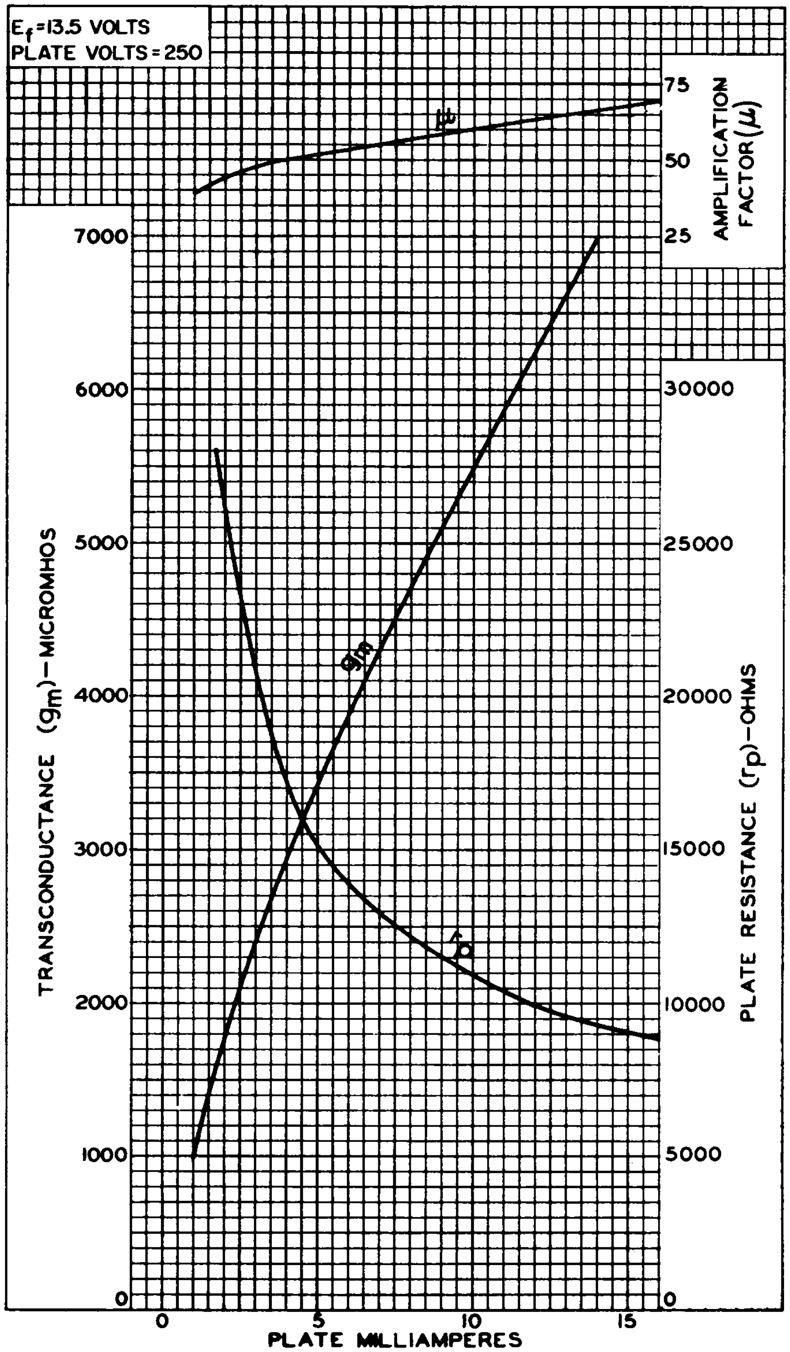
500-Hour Intermittent Life Performance:

This test is performed on a sample lot of tubes from each production run to insure high quality of the individual tube and to guard against epidemic failures. Life testing is conducted under the following conditions: Heater volts = 15.0 and maximum-rated plate dissipation.

AVERAGE PLATE CHARACTERISTICS



AVERAGE CHARACTERISTICS



92CM-11486